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Docket No. 1232-5303**REMARKS**

Applicants respectfully request reconsideration of this application in view of the foregoing amendments and the following remarks.

**Amendments to the Specification**

Applicants have amended the Specification at page 5, line 16 to correct an inadvertent typographical error. Specifically, the six mirror catoptric projection system of International Publication No. WO 02/056114A2 to Mann ("Mann") was described in part, in that "a first mirror M1 has such a convex surface that light incident upon the second mirror M2 from the first mirror M1 remarkably inclines relative to the optical axis." (See Specification as published, ¶[0013].) Mann however, clearly states at page 9, line 26 that light "is directed to *concave* mirror M1." (emphasis added)(See also Mann, Figure 1.) This inadvertent error in description has been corrected and the Specification has been amended to now correctly state that the first mirror M1 has a concave, and not a convex, surface.

Accordingly, Applicants respectfully request reconsideration of the rejections based on Mann, discussed below, in view of this amendment.

**Claim Status**

Claims 1-34 are pending in this application, of which claims 11-17, 29 and 30 are withdrawn from consideration pursuant to a previous Requirement for Election of Species and subsequent Election by Applicants. Of the pending claims under consideration, claims 1, 18, 26-28 and 31-34 are independent in form. Applicants have amended claims 18, 19, 22, 24, 26 and 31-34. No new matter has been added by these amendments.

Applicants have not herein canceled the withdrawn claims in the event a generic claim is ultimately allowed. Applicants will cancel the withdrawn claims at an appropriate juncture such as issuance of a final rejection, if necessary.

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Docket No. 1232-5303**Claim Objections**

The Examiner has objected to claims 18, 26, 31-34 because of stated informalities. (See Office Action, page 2.) Applicants have amended the claims as suggested by the Examiner and believe the objections are overcome. Accordingly, Applicants respectfully request withdrawal of the objection to claims 18, 26, 31-34.

**Rejections Under 35 U.S.C. § 102(b)**

Claims 18-25, 31 and 32 have been rejected under 35 U.S.C. § 102(b), as allegedly being anticipated by U.S. Patent No. 6,172,825 to Takahashi ("Takahashi") and claims 1-10, 18-25, 27, 28, 31 and 32 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by International Publication No. WO 02/056114 to Mann et al., ("Mann").

Applicants respectfully disagree with the characterization of the claims and of the teachings attributed to the prior art in the stated rejections. Applicants respectfully traverse these rejections and submit that the claims as properly understood by one of ordinary skill in the art are patentably distinct from the cited references.

As to Takahashi, the Examiner contends that Figures 2 and 4 of Takahashi disclose "a catoptric projection optical system comprising six mirrors including a first mirror which is a convex mirror (Fig. 4, col. 4, lines. 60-64)." (See Office Action, p. 3 (emphasis added.))

The catoptric projection optical system of independent claims 18, 31 and 32 is characterized in part in that "the first mirror has a convex or plane shape" (characteristic A).

In rejecting independent claims 18, 31 and 32, the Examiner has taken the position that Takahashi discloses a first mirror having a convex shape. However, Applicants respectfully disagree and submit that the first mirror disclosed in Takahashi is clearly a concave shape. Furthermore, Takashi does not provide a suggestion to use a first mirror

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having a convex or plane shape in lieu of the concave shaped first mirror clearly disclosed therein. Thus, Takahashi does not disclose or suggest at least the characteristic A and consequently does not anticipate or render obvious independent claim 18 and/or any of the claims depending therefrom, i.e., claims 19-25, or independent claims 31 and 32.

As to Mann, the Examiner contends that Mann discloses "a catoptric projection optical system comprising six mirrors (Fig. 1, page 1, lines 9 and 10) including the first mirror which is a convex mirror (as admitted by applicant in written description page 5, lines 12-17)." (See Office Action, p. 3 (emphasis added).)

The catoptric projection optical system of independent claims 18, 31 and 32 is characterized in part in that "the first mirror has a convex or plane shape." (characteristic A). Similarly, the catoptric projection optical system of claim 1, the exposure apparatus of claim 27 and the device fabrication method of claim 28 are characterized in part as including "a first convex mirror." (characteristic A).

In rejecting independent claims 1, 18, 27, 28, 31 and 32, the Examiner has taken the position that Mann discloses a first mirror having a convex shape. The Examiner attributes this understanding of Mann to Applicants' written description at page 5, lines 12-17. As discussed above, Applicants have corrected this typographical error in the Specification to accurately reflect that Mann discloses a first mirror M1 having a concave, and not a convex, surface. Accordingly, in view of the amendments to the Specification, Applicants submit that the Examiner's reliance on Applicants' written description at page 5, lines 12-17 as a basis for claiming that Mann discloses a first mirror having a convex shape is improper.

Moreover, the first mirror disclosed in Mann is clearly a *concave* shape. (See Mann, at page 9, line 26 and Figure 1.) In other words, Mann does not disclose at least the characteristic A. Furthermore, Mann does not provide a suggestion to use a first mirror

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having a convex or plane shape in lieu of the concave shaped first mirror clearly disclosed therein. Thus, Mann does not disclose or suggest at least the characteristic A and consequently does not anticipate or render obvious independent claims 1 and 18 and/or any of the claims depending therefrom, or independent claims 27, 28, 31 and 32.

For at least the foregoing reasons, the present invention is different than that in the prior art and is neither taught in nor suggested by Takahashi and/or Mann and therefore Applicants respectfully request that these rejections be withdrawn.

**Double Patenting Rejections**

Claims 1-10, 18-28 and 31-34 have been rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-18 of U.S. Patent No. 6,922,291 in view of Mann and claims 1-10, 18-28 and 31-34 have been rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-44 of copending Application No. 10/783,788 in view of Mann.

Applicants respectfully disagree with the characterization of the claims hereof, of USP 6, 922,291 and of co-pending application 10/783,788 and of the teachings attributed to the prior art. Applicants respectfully traverse these rejections.

As discussed above, the first mirror disclosed in Mann has a concave, not a convex, shape, and therefore the combination of Mann with either U.S. Patent No. 6,922,291 or copending Application No. 10/783,788 does not teach or suggest the present invention as recited in claims 1-10, 18-28 and 31-34.

In addition, when the first mirror is a concave shape, an angle between a light ejected from the first mirror to the second mirror and the optical axis becomes large. Therefore, the incident angle to the mirror becomes large. When the first mirror is a convex shape as in the present invention, the above problem is avoided and the correction of Petzval

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can be effectively corrected. Such substitution i.e., convex for concave- is not obvious for the reasons stated above.

Therefore, Applicants submit that these double patenting rejections are improper. Accordingly, for at least these reasons Applicants respectfully request that these rejections be withdrawn.

#### Dependent Claims

Applicants have not independently addressed the rejections of the dependent claims because Applicants submit that, as the independent claims from which the dependent claims depend are believed allowable for at least the reasons discussed *supra*, the dependent claims are believed allowable for at least similar reasons. Applicants, however, reserve the right to address such rejections should such response be necessary and appropriate.

#### AUTHORIZATION

In view of the foregoing, Applicants respectfully submit that all claims as presented herein are allowable over the art of record and that the application is hereby placed in condition for allowance which action is respectfully requested.

Applicants believe no fees are required for this Amendment and that the petitioned extension of time is sufficient for its filing. If, however, an additional extension of time is necessary to render this filing timely, such is hereby petitioned and the Commissioner is hereby authorized to charge any additional fees which may be required for this paper, or credit any overpayment, to Deposit Account No. 13-4500, Order No. 1232-5303.

In the event that a telephone conference would facilitate prosecution, the Examiner is invited to contact the undersigned at the number provided.

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An early and favorable examination on the merits is respectfully requested.

Respectfully submitted,  
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